Appl. No. 10/695,681
Amdt. dated September 18, 2006
Reply to Office Action of June 22, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently amended) A method of aggregating data comprising the steps of:

receiving a plurality of web log records;

generating a volume cube having a plurality of dimensions based on the plurality of web log records;

generating a first summary cube at a first level of abstraction based on the volume cube; wherein the first summary cube has a plurality of cells and at least one parent dimension for each dimension of the volume cube; wherein each cell includes a value that represents a summarization of corresponding cell values of the volume cube aggregated over all the dimensions of the volume cube; and

using a first summary cube to perform diagonal aggregation without rollup; and

generating a second summary cube at a second level of abstraction based on the first summary cube, wherein the second summary cube has at least one parent dimension for each dimension of the first summary cube.

2.   (Currently amended) The method of claim 1 further comprising:
generating a second summary cube at a second level of abstraction based on the first summary cube; wherein the second summary cube has at least one parent dimension for each dimension of the first summary cube;
wherein the second summary cube is generated by limiting the dimensions of the first summary cube to a range of values above a predetermined value.

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3.   (Previously presented) The method of claim 1 further comprising:

generating a partial aggregate along one or more dimensions by using a query that specifies at least one dimension along which the partial aggregate is to be calculated.

4.   (Original) The method of claim 3 wherein the first summary cube includes aggregated values; and wherein the first summary cube includes a drill-down enabling mechanism for specifying relationships between dimensions of the volume cube and the dimensions of the first summary cube for enabling drill-down analysis.

5.   (Previously presented) The method of claim 1 wherein the first summary cube includes a plurality of dimensions; and wherein each dimension corresponds to at least one dimension of the volume cube.

6.   (Previously presented) The method of claim 5 wherein the first summary cube includes:

a first dimension for specifying an origin;

a second dimension for specifying a subject; and

a third dimension for specifying a referring site.

7.   (Currently amended) The method of claim [[2]] 1 wherein the second summary cube includes a plurality of dimensions; and wherein each dimension corresponds to at least one dimension of the first summary cube.

8.   (Previously presented) The method of claim 7 wherein the second summary cube includes:

a first dimension for specifying a top origin;

a second dimension for specifying a top subject; and

a third dimension for specifying a top referring site.

9.   (Original) The method of claim 1 wherein each web log record comprises a plurality of fields.

10.   (Previously presented) The method of claim 9 wherein each web log record includes:

        a first field for storing an IP address of an origin site;

        a second field for storing a target URI;

        a third field for storing a referring site; and

        a fourth field for storing a time.

11.   (Currently amended) A method for analyzing web access comprising :

        receiving a plurality of web log records;

        generating summary information based on the plurality of web log records;

        performing derivation and analysis to discover usage patterns or rules for supporting business intelligence by using the summary information;

        generating a high diagonal cube to represent the summary information;

        using the high diagonal cube to perform diagonal aggregation without rollup; ~~and~~

        generating high profile cubes based on elements of the high diagonal cube;

        <u>generating a first cube for ranked list of elements of a particular dimension; and</u>

        <u>generating a second cube for one of volume and probability distribution corresponding to the ranked list of elements of a particular dimension.</u>

12.   (Previously presented) The method of claim 11 wherein performing derivation and analysis to discover usage patterns and rules for supporting business intelligence includes one of usage analysis, web site traffic analysis, and business rules discovery.

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13. (Previously presented) The method of claim 11 further comprising:

performing multilevel and multidimensional analysis on the summary information to generate one of multidimensional patterns, multilevel patterns, and probability based patterns.

14. (Canceled).

15. (Canceled).

16. (Previously presented) The method of claim 11 further comprising :

performing correlation analysis on the summary information to general association rules for use in web access analysis.

17. (Previously presented) The method of claim 16 wherein performing correlation analysis on the summary information to generate association rules for use in web access analysis includes generating one of multilevel association rules with flexible base and dimensions and time-variant association rules.

18. (Currently amended) A system for analyzing web access comprising:

a source of web log records;

an OLAP engine that executes a web access analysis program for receiving a plurality of web log records, generates multi-dimensional summary information based on the web log records; and performs derivation and analysis to discover usage patterns or rules for supporting business intelligence by using the multi-dimensional summary information; and

a diagonal aggregation facility that assists the web access analysis program by generating a high diagonal cube;

wherein the high diagonal cube performs diagonal aggregation without rollup;

wherein the web access analysis program generates multilevel and multidimensional feature ranking cubes for ranking web access along multiple dimensions and at multiple levels by generating a first cube for ranked list of elements of a particular dimension and by generating a second cube for one of volume and probability distribution corresponding to the ranked list of elements of a particular dimension.

19. (Canceled).

20. (Original) The system of claim 18 wherein the web access analysis program includes a correlation analysis facility for performing correlation analysis on the summary information to generate association rules for use in web access analysis; wherein the correlation analysis facility generates one of multilevel association rules with flexible base and dimensions and time-variant association rules.

21. (Original) The system of claim 18 wherein the web access analysis program includes a direct binning facility for concurrently generating a volume cube based on the plurality of web log records and directly generating a high diagonal cube based on plurality of web log records.

22. (Previously presented) The method of claim 11 wherein providing a scalability enhancement mechanism for summarizing data comprises employing one of direct binning, diagonal aggregation, and high profile cubes.

23. (Previously presented) The method of claim 11 wherein providing a scalability enhancement mechanism for summarizing data comprises providing a direct binning facility for concurrently generating a volume cube based on the plurality of web log records and generating a high diagonal cube based directly on the plurality of web log records.

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24. (Previously presented) The system of claim 18 wherein the scalability enhancement mechanism employs one of direct binning, diagonal aggregation, and high profile cubes to enhance scalability;

> wherein the scalability enhancement mechanism includes one of a direct binning facility for concurrently generating a volume cube based on the plurality of web log records and directly generating a high diagonal cube based on plurality of web log records, a diagonal aggregation facility for generating a high diagonal cube and using the high diagonal cube to perform diagonal aggregation without rollup, and a high profile cube facility for generating high profile cubes.

25. (Currently amended) A computer readable medium containing instructions that, when executed by a processor, cause the processor to:

> receive a plurality of web log records;
>
> generate summary information based on the plurality of web log records;
>
> perform derivation and analysis to discover usage patterns or rules for supporting business intelligence by using the summary information;
>
> generate a high diagonal cube based on the summary information; and
>
> use the high diagonal cube to perform diagonal aggregation without rollup; and
>
> generate a first cube for ranked list of elements of a particular dimension; and
>
> generate a second cube for one of volume and probability distribution corresponding to the ranked list of elements of a particular dimension.

26. (Previously presented) The computer readable medium of claim 25, wherein each web log record comprises a plurality of fields.

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27. (Previously presented) The computer readable medium of claim 25, wherein each web log record comprises:

a first field that comprises an IP address of an origin site;

a second field that includes a target URI;

a third field that comprises a referring site; and

a fourth field that includes storing a time.

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